

Construction Society 5.0

with

Building Information Modelling

Rezza Munawir, ST, MT, MMG

Kepala Seksi Perencanaan dan Kerja Sama
Balai Penerapan Teknologi Konstruksi
Ditjen Bina Konstruksi-Kementerian PUPR



**KEMENTERIAN PEKERJAAN UMUM
DAN PERUMAHAN RAKYAT**



Data Pribadi:

REZZA MUNAWIR MANIK, ST, MT, MMG

Jakarta, 1984

Kepala Seksi Perencanaan dan Kerja Sama

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rezza.munawir@gmail.com

Menikah, 1 Istri 1 Anak

Komplek Serpong Garden 2 Cluster Green

Garden C8-4 BSD City Tangerang

Pengalaman Organisasi:

- **Pembina Tim BIM IMTSI (2020 – kini)**
- **Founder of Young BIM Engineer (2019 – kini)**
- **Pengurus IKA Sipil Univ Brawijaya (2019 – kini)**
- **Co-Founder PUPR Muda (2018 – kini)**
- **Koordinator Band Ditjen Bina Konstruksi (2019 – kini)**
- **Ketua PPI Keio University (2015 – 2016)**
- **Ketua Generasi Muda BPDI Kem PUPR (2009 – kini)**

Pengalaman Kerja:

- **Asisten Lab Transportasi Sipil Unibraw (2005)**
- **Management Trainee PT. PP (Persero) Tbk. (2008)**
- **ASN Kementerian PUPR (2008 – kini)**

Background Pendidikan:

- **S1 Teknik Sipil Universitas Brawijaya (3.53/4.00)**
- **S2 Perencanaan Wilayah dan Kota ITB (3.75/4.00)**
- **S2 Media and Governance Keio University-Japan (2.70/3.00)**

Pendidikan Non Formal:

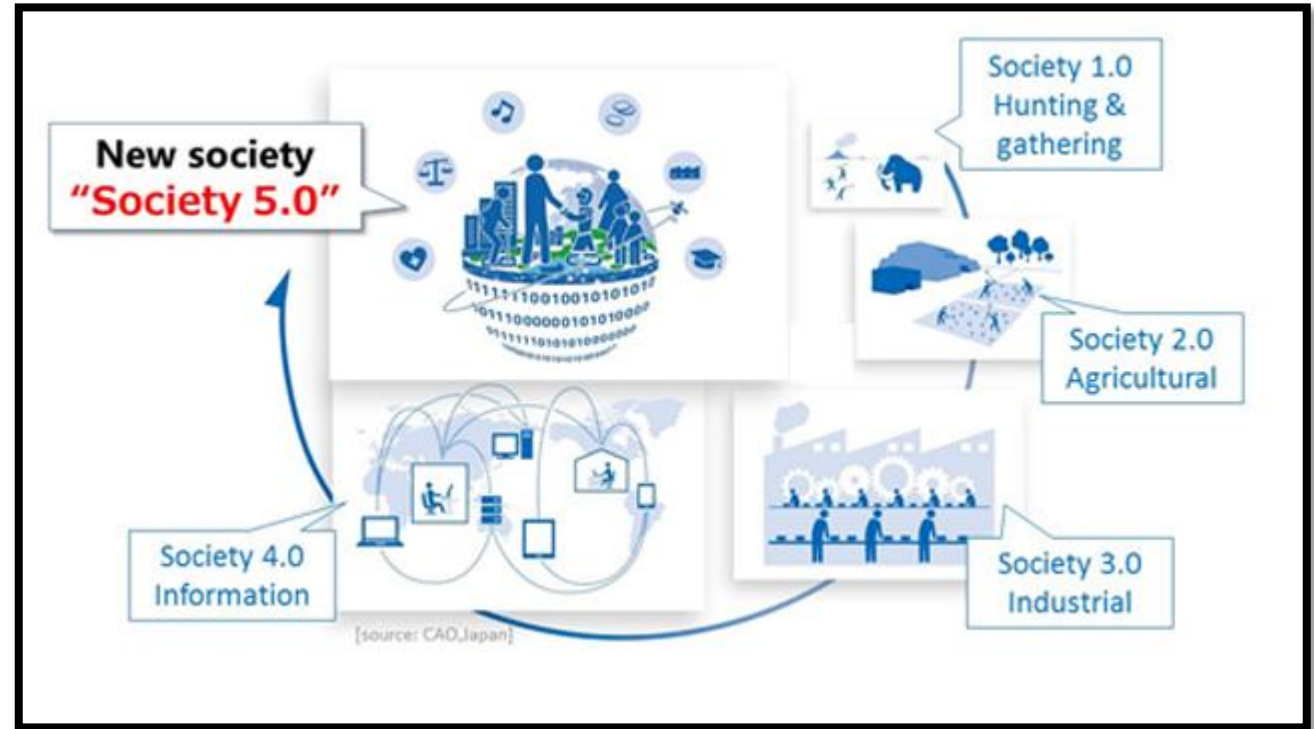
- **Pelatihan Infrastruktur (China, 2013)**
- **Seminar *Climate Change* (Korsel, 2015)**
- **ToT BIM Tekla Structures-Trimble**
- **Pelatihan 5D-BIM Cubicost-Glodon**
- **Hands on Training ArchiCAD-Graphisoft**
- **Pelatihan Revit-Architecture-Autodesk**
- **Pelatihan BIM360-Autodesk**
- **Pelatihan Allplan-Nemetschek**

Prestasi:

- **Juara II Diklat Kepemimpinan Tk. IV**
- **Satyalancana X dari Presiden RI**
- **Top 30 The Future Leader ASN 2019**
- **Top 45 & Top 99 SIBIMA Konstruksi (tim)**
- **Juara I PU Idol 2009**

Society 5.0

Society 5.0 is Japan's concept of a technology-based, human-centered society, emerging through the fourth industrial revolution. Artificial intelligence will transform big data collected through the Internet of Things into "new wisdom" and it will enhance human ability and expand our infinite possibilities, helping us enjoy more fulfilling lives.



https://www8.cao.go.jp/cstp/english/society5_0/index.html

____Prime Minister's Office of Japan



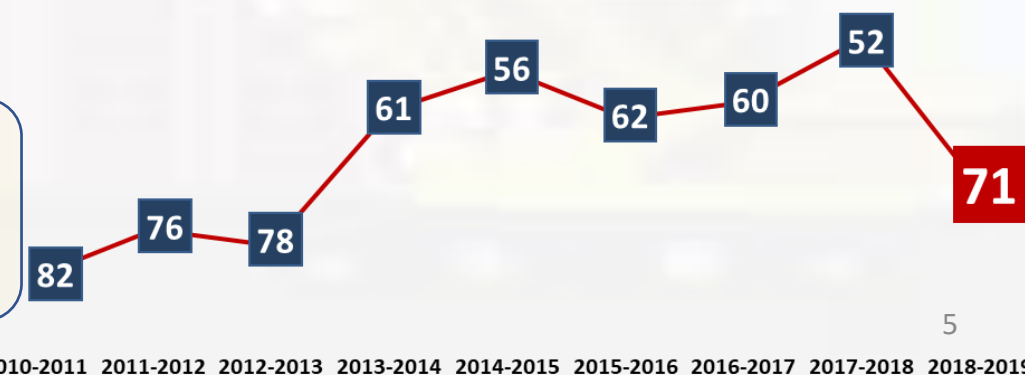
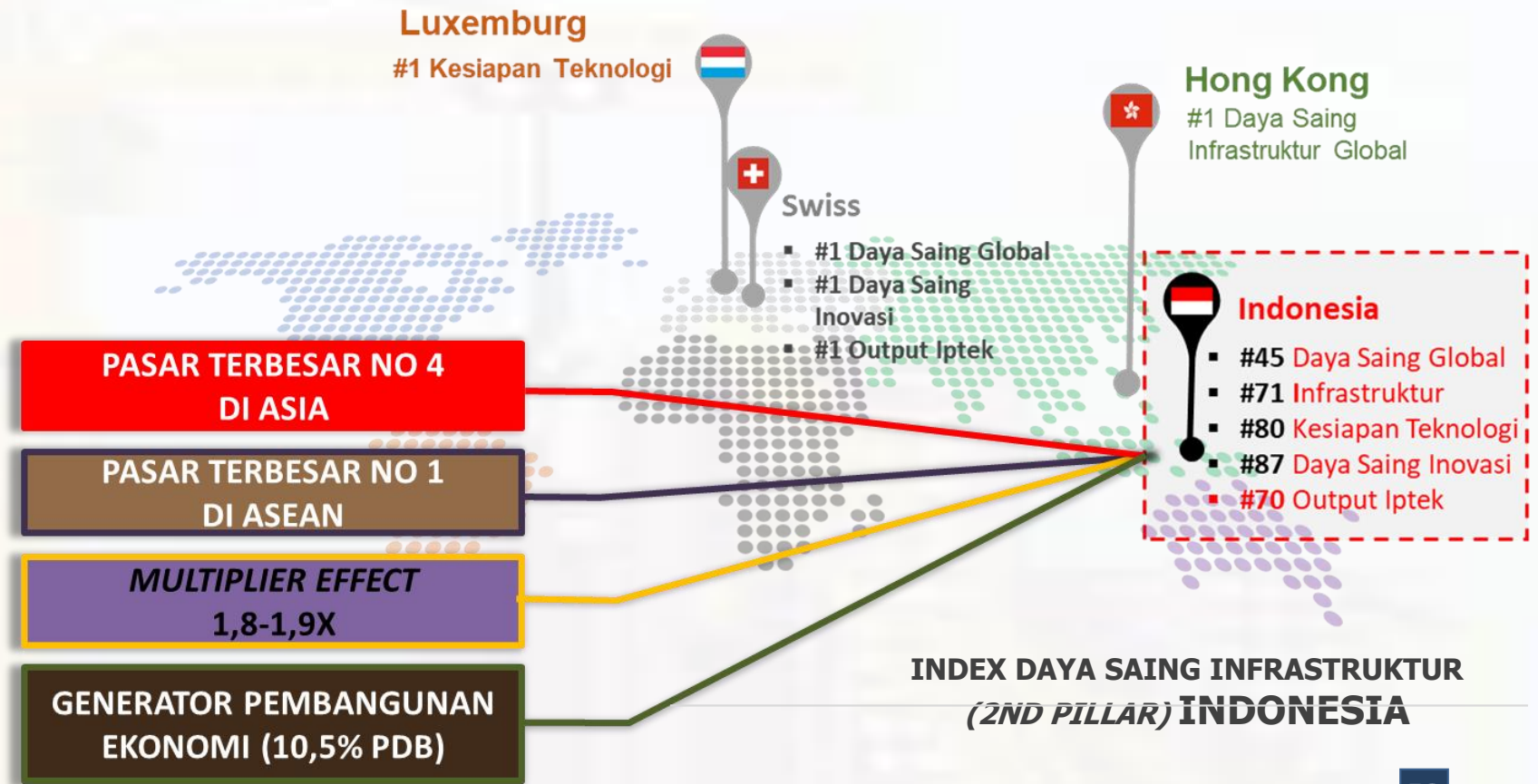
PEMBANGUNAN SDM PRIORITAS UTAMA KITA

“Pembangunan **SDM** akan menjadi **prioritas utama** kita, membangun SDM yang pekerja keras, yang dinamis, membangun SDM yang terampil, menguasai **IPTEK**”

Daya Saing Infrastruktur Indonesia Dibandingkan Negara Lain

Indeks Daya Saing Global Indonesia (GCI)

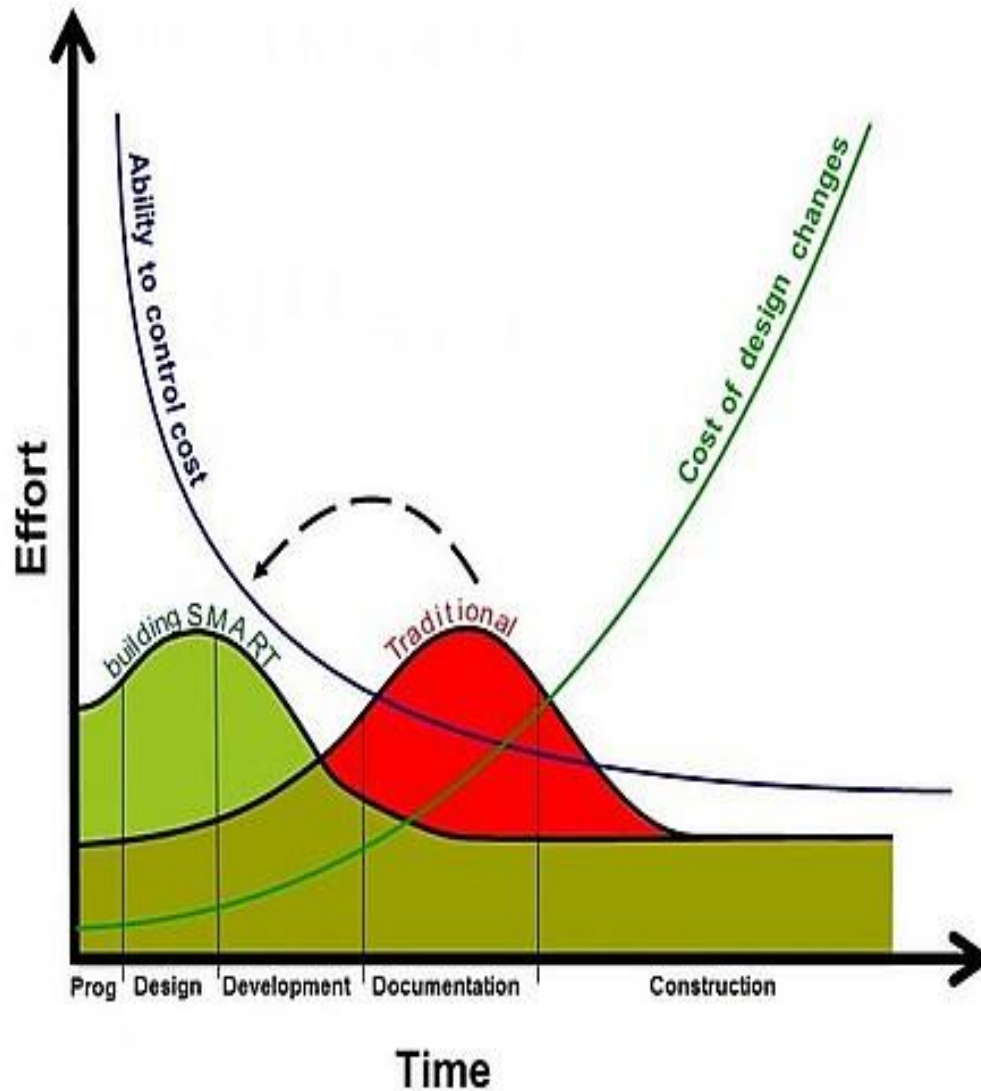
YEAR	RANK
2010 – 2011	44
2011 – 2012	46
2012 – 2013	50
2013 – 2014	38
2014 – 2015	34
2015 – 2016	37
2016 – 2017	41
2017 – 2018	36
2018 – 2019	45



“Sebagian besar kualitas infrastruktur telah meningkat, namun tetap menjadi salah satu faktor utama penghambat melakukan usaha”

(sumber: Global Competitiveness Index, WEF, 2019)
(sumber: ASIA CONSTRUCTION OUTLOOK, AECOM 2019)

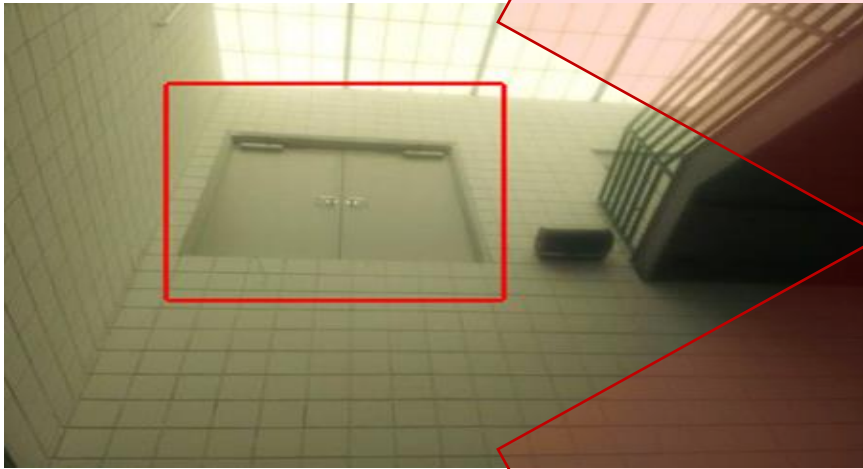
1. Efficiency-Improving Technology: Smart Contracts, Drones, Augmented Reality (AR)
2. Mobile Technology
- 3. Building Information Modeling (BIM)**
4. Construction Management Software
5. Modular & Prefabricated Construction
6. Green Construction
7. Better Safety Equipment
8. Investment in Infrastructure
9. Persistent Labor Shortage
10. Increasing Material Costs



McLeamy Curve

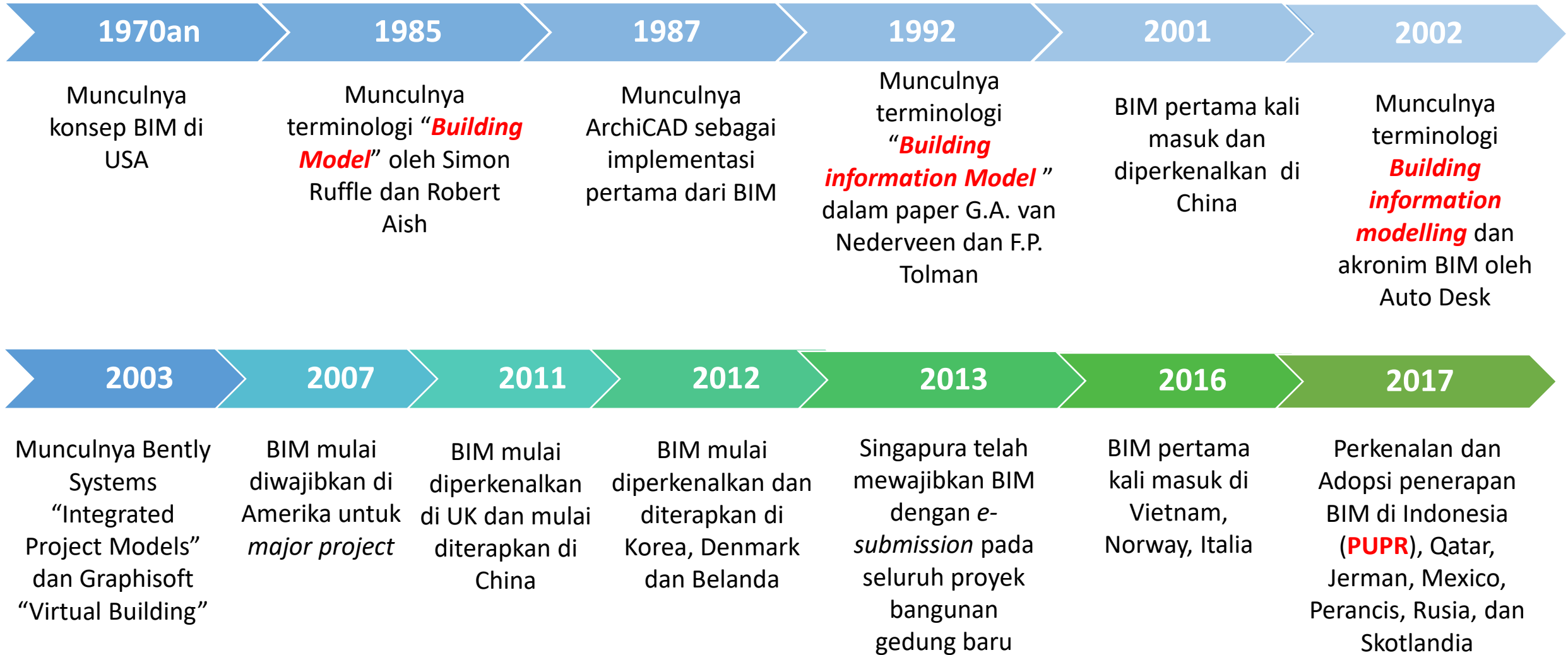
BIM Aids Process, But Further Promise Lies in Interoperability

<https://thebimhub.com/2015/06/22/bim-aids-process-but-further-promise-lies-in-inter/#.XZr-UkYzaUk>



SEJARAH BIM

(*Building Information Modelling*)



DEFINISI BIM

(Building Information Modelling)

Building Information Modelling (BIM) is a digital representation of physical and functional characteristics of a facility. A BIM is a shared knowledge resource for information about a facility forming a reliable basis for decisions during its life-cycle; defined as existing from earliest conception to demolition.

1 DATABASE INFORMASI DALAM 3D MODEL

Data terkelola **DALAM BIM DATABASE**

3 BIM adalah KOLABORASI

Kerja Sama
(Koordinasi – kolaborasi)

Antar stakeholder menggunakan BIM

Hand over data & informasi yg berkelanjutan

Antar stakeholder dalam seluruh lifecycle proyek

2 BIM adalah VISUALISASI pada setiap tahapan PROYEK



4

BIM adalah METODE, bukan software

- *Building Information Modelling (BIM)* sebagai metode atau workflow
- Platform/software mendukung implementasi metode BIM

BIM → BETTER INFORMATION MANAGEMENT

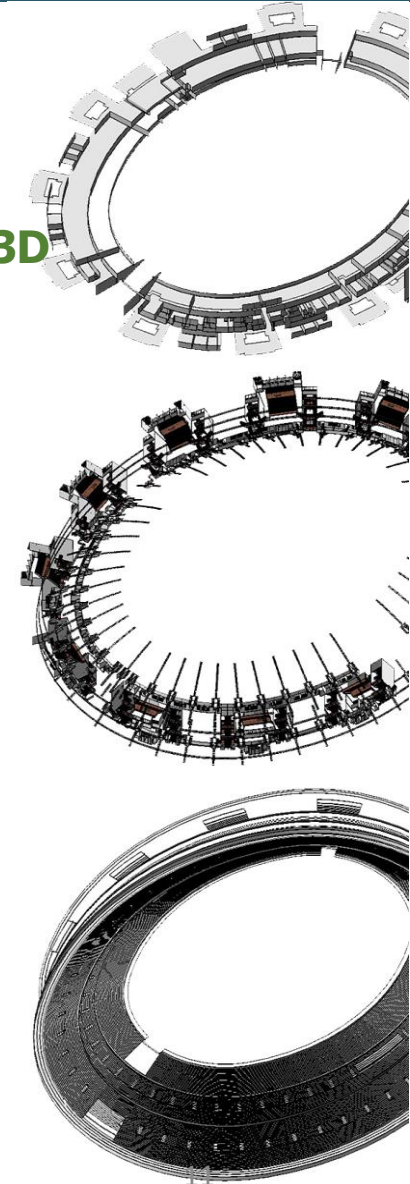
KARAKTERISTIK BIM

(Building Information Modelling)

BIM adalah Pendekatan baru melibatkan proses perancangan dan pembuatan asset bangunan menggunakan representasi 3D



BIM adalah proses membuat data set digital yang membentuk model 3D dan informasi yang melekat/ Common Data Environment (CDE).



Prinsip BIM terletak pada proses pembuatan model dan data secara bersamaan dan dikolaborasikan antar pada pelaku sejak proses perencanaan, perancangan, fabrikasi hingga pembangunan dan pemeliharaan

TINGKAT IMPLEMENTASI (Maturity Level)

Level 0

- 2D CAD untuk penggambaran dan dokumentasi (*drafting*).

Level 1

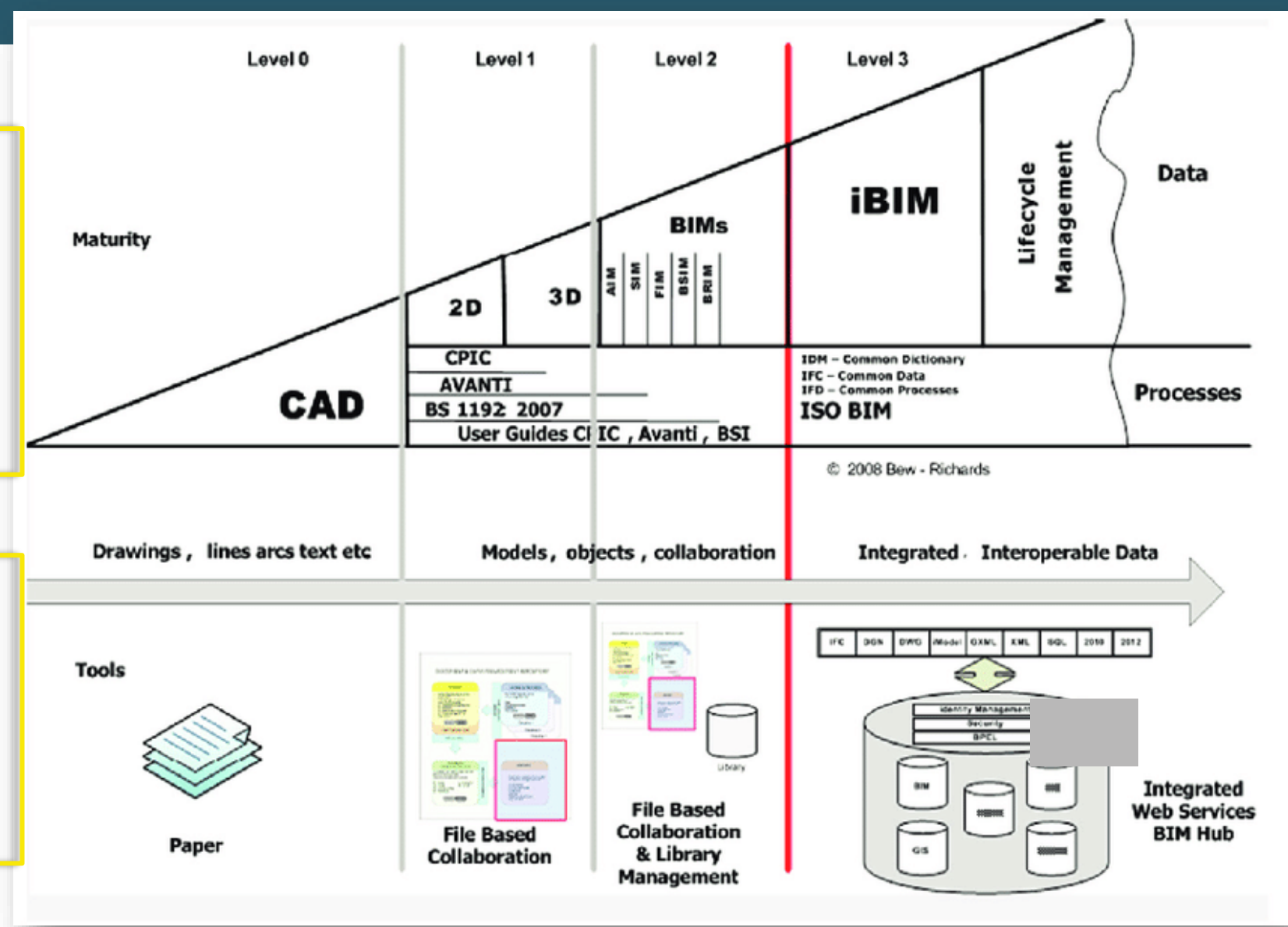
- 2D dan 3D pada Pekerjaan desain konseptual.

Level 2

- Sudah bekerja dengan sistem BIM.

Level 3

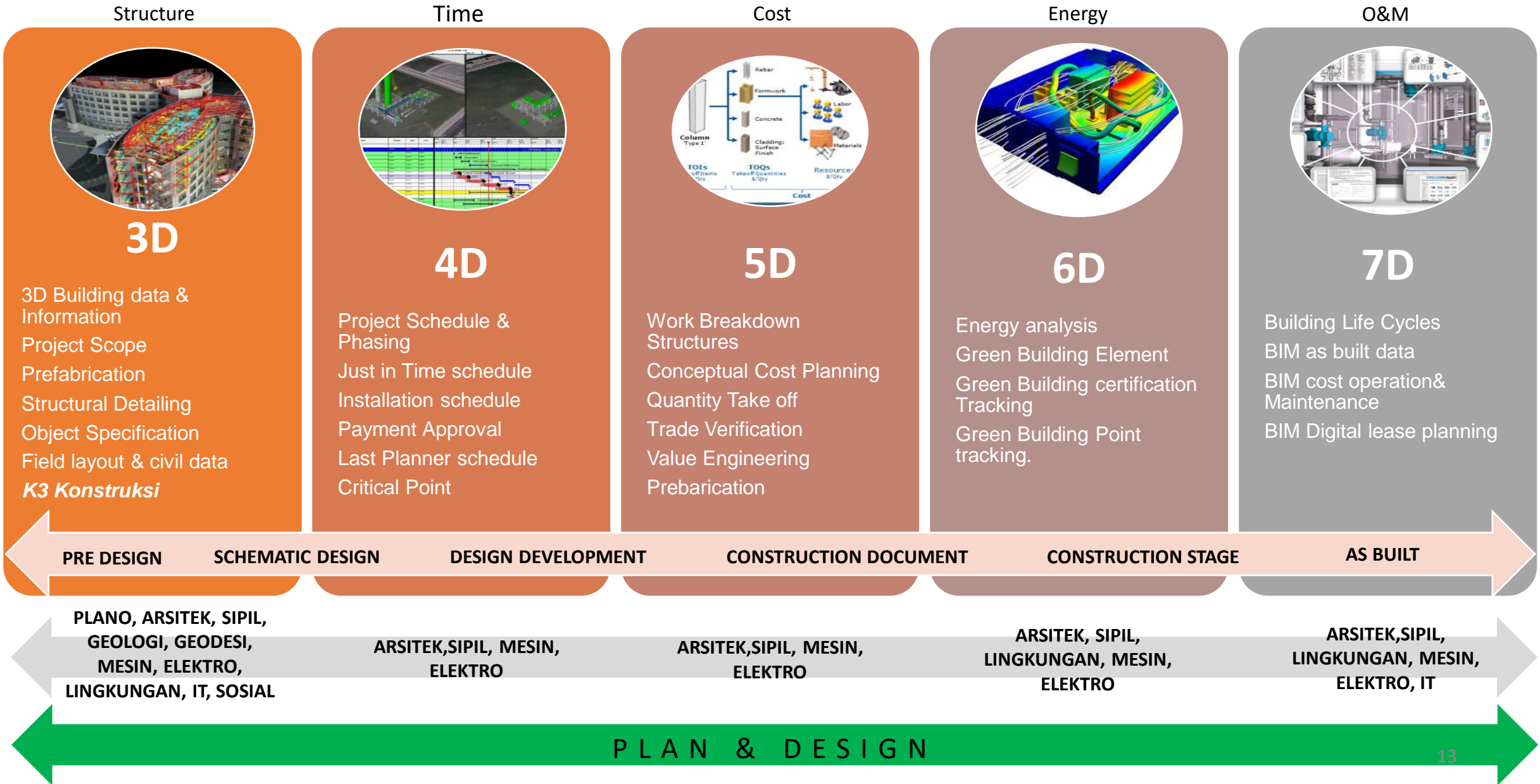
- Sistem BIM sudah terintegrasi.



Sumber: Panduan Adopsi BIM dalam Organisasi, Tim BIM PUPR. 2018; UK BIM Roadmap

IMPLEMENTASI BIM DALAM KONSTRUKSI

Information obtained from BIM based on the functions



MENGAPA BIM DIPERLUKAN

(Building Information Modelling)

PERMASALAHAN MASA LALU DAN SAAT INI

SISTEM DATABASE: PERENCANAAN/
PENGARSIPAN PROYEK TIDAK BAIK

DATABASE PERENCANAAN PROYEK
TIDAK TERINTEGRASI

INEFISIENSI-INEFEKTIVITAS
PERENCANAAN DAN PELAKSANAAN
PROYEK

BIM
DIPERLU
KAN
UNTUK

PERMASALAHAN YANG AKAN DATANG

PEKERJAAN KOMPLEKS
(MULTI SISTEM)

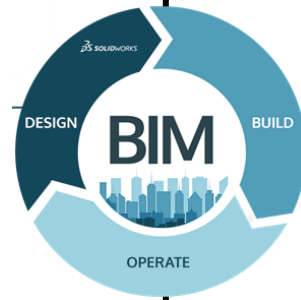
TUNTUTAN VISUALISASI
DESAIN PROYEK & PASCA
IMPLEMENTASI

TUNTUTAN PENGHEMATAN
(LOW COST) & TEPAT SASARAN
(EFISIENSI – EFEKTIVITAS)



TUJUAN DAN MANFAAT

Building Information Modelling



Peningkatan produktivitas dan efisiensi proses konstruksi

Kolaborasi stakeholder konstruksi

Peningkatan mutu, pengendalian biaya dan manajemen waktu

Regulator aktif memberikan approval, memonitor dan supervise progress konstruksi

1. Peningkatan efisiensi dan akurasi

2. Proses desain dan konstruksi lebih ramping dan transparan

3. Akurasi dalam perhitungan

4. Menghindari kesalahan mulai perencanaan hingga pelaksanaan

5. Waktu pelaksanaan lebih cepat

TEROBOSAN UNTUK MEMPERCEPAT PEMBANGUNAN INFRASTRUKTUR



Regulasi dan Hukum



Sumber Daya Manusia



Pendanaan Inovatif

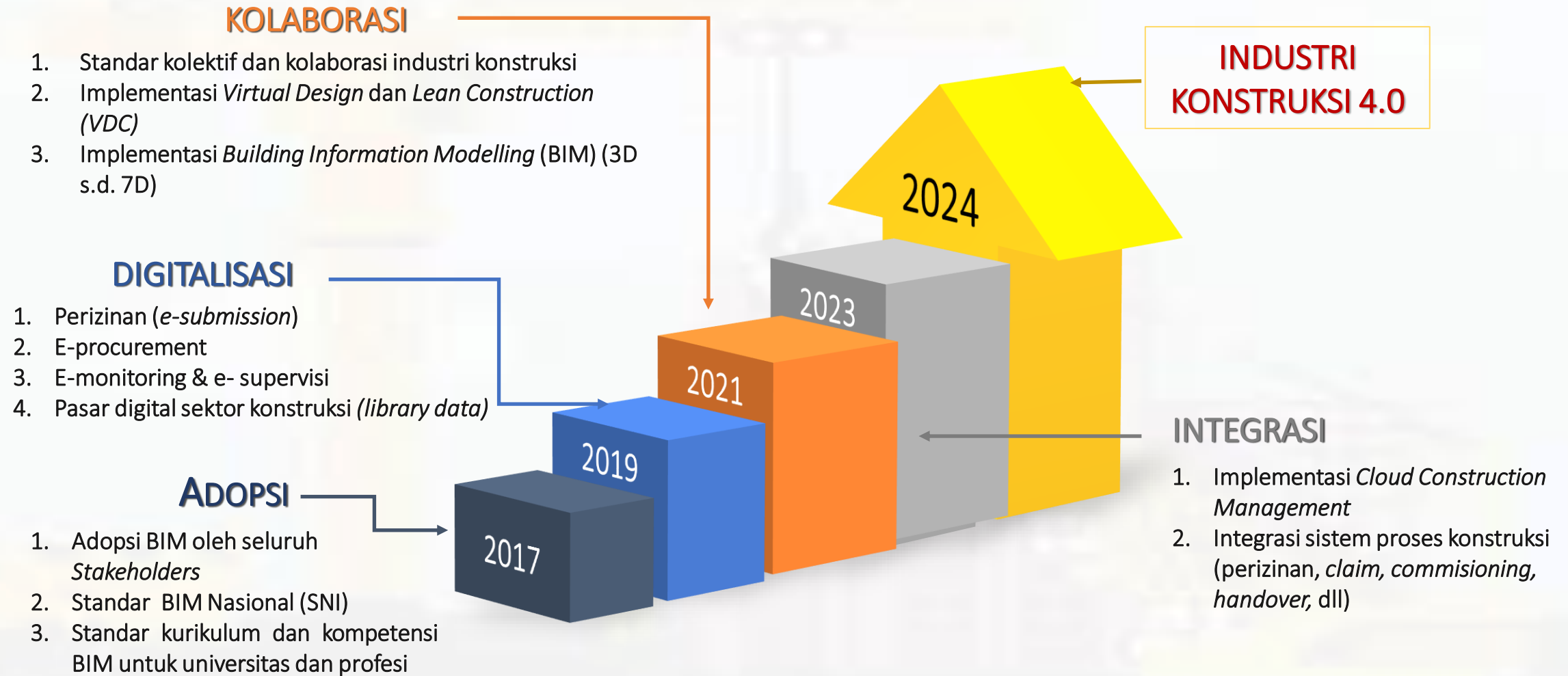


Kepemimpinan



**Penerapan Hasil Riset
dan Teknologi**

ROADMAP INDUSTRI KONSTRUKSI 4.0



**LAMPIRAN IV PERATURAN MENTERI PEKERJAAN UMUM DAN PERUMAHAN RAKYAT NOMOR 22/PRT/M/2018
TENTANG PEDOMAN PEMBANGUNAN BANGUNAN GEDUNG NEGARA**

KEGIATAN DAN TUGAS PENYEDIA JASA KONSTRUKSI A. PENYEDIA JASA PERENCANAAN KONSTRUKSI no. 13

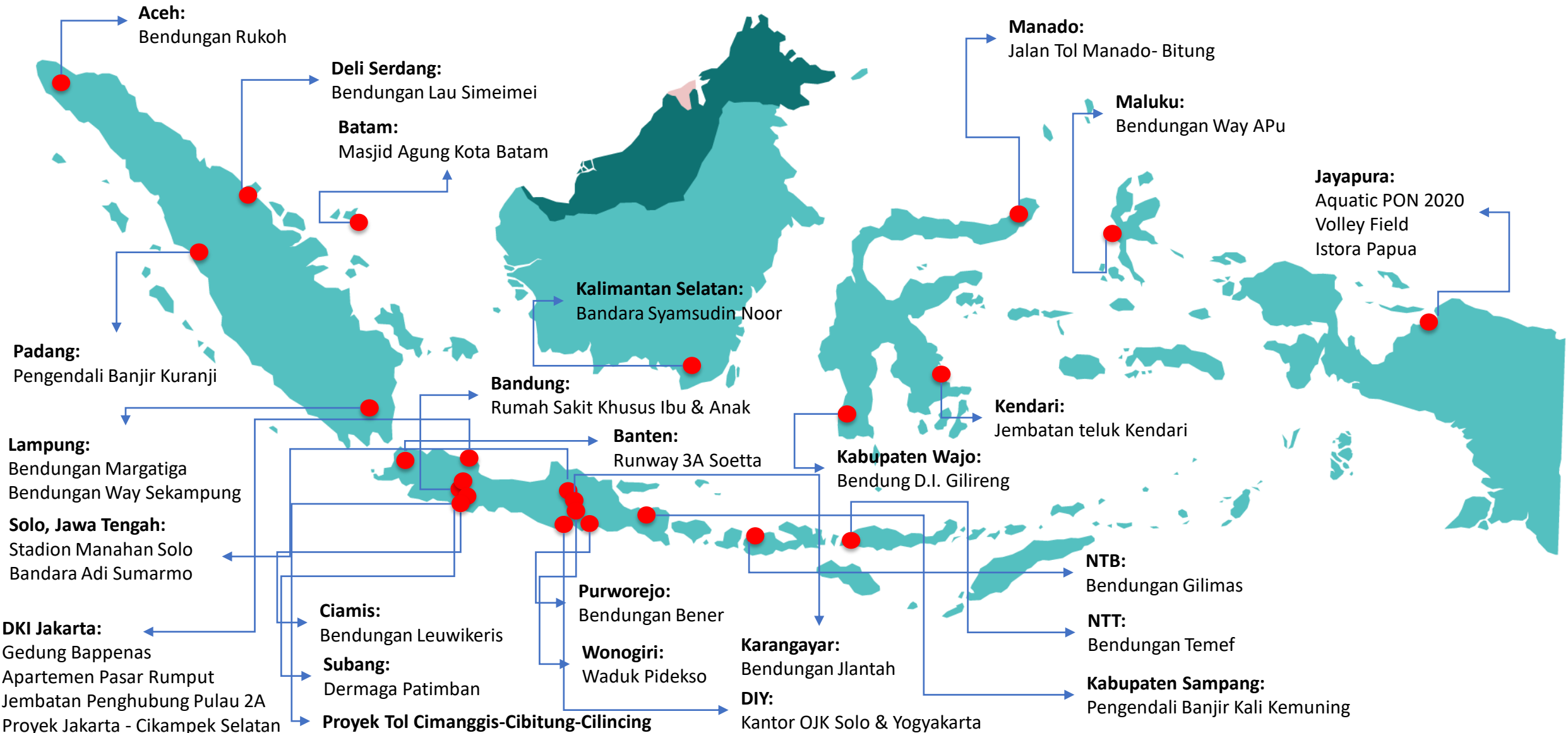
Penggunaan Building Information Modelling (BIM) **wajib** diterapkan pada **Bangunan Gedung Negara tidak sederhana** dengan **kriteria luas diatas 2000 m²** (dua ribu meter persegi) dan **diatas 2 (dua) lantai**.

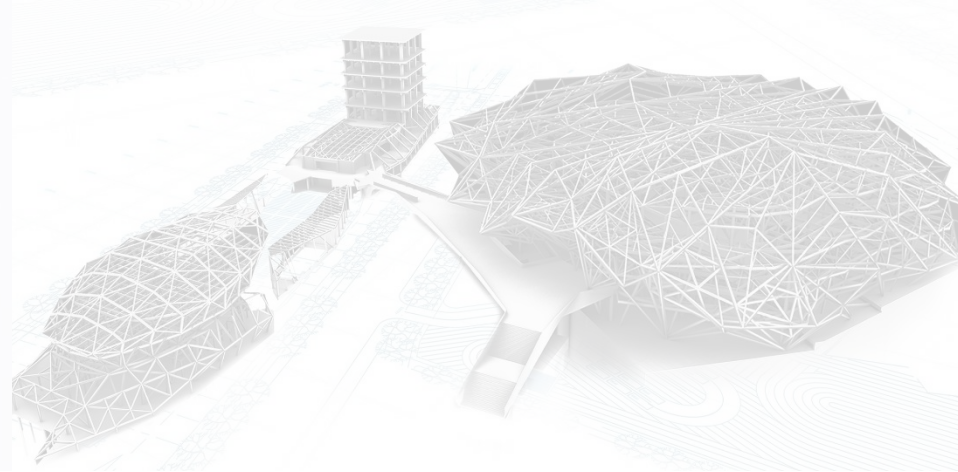
Keluaran (*deliverables*) dari perancangan merupakan hasil desain menggunakan BIM untuk:

- a. gambar arsitektur.
- b. gambar struktur.
- c. gambar utilitas (mekanikal dan elektrik)
- d. gambar lansekap.
- e. rincian volume pelaksanaan pekerjaan.
- f. rencana anggaran biaya

BIM SUCCESS STORY DI INDONESIA

(Building Information Modelling)





BIM Level 1 by Wijaya Karya



INTEROPERABILITY

MULTI PLATFORM



CONTEXT CAPTURE
 DRONE SURVEY

ALLPLAN ENGINEERING
 AUTODESK REVIT
 OpenRoads Designer CONNECT Edition
 BENTLEY NAVIGATOR

4D & 5D SIMULATION

SYNCHRO PRO

AIRFLOW SIMULATION

Bentley Hevacomp

AR
 VR

PUBLISH

LUMION

LUMEN RT

05 VISUALIZATION
Activate Windows
Go to Settings to activate Windows.



REALITY CAPTURE FOR CONTEXT MODELING

TOTAL
1 Days

 **DRONE SURVEY**



AERIAL SURVEY

- ✓ 1 Quadruped drone, 15 min flight
- ✓ GCP Not Required
- ✓ Capture area: 1 Ha

 **CONTEXT CAPTURE**



PHOTOGRAMMETRY PROCCESS

- ✓ Fast Processing Data
- ✓ Enable Flattening Area
*Activate Windows
Go to Settings to activate Windows.*
- ✓ Multi export
(Orthophoto, Terrain, Photogrametry)



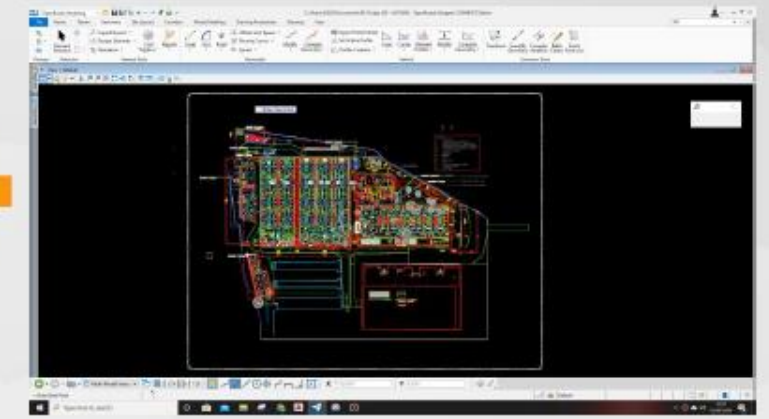
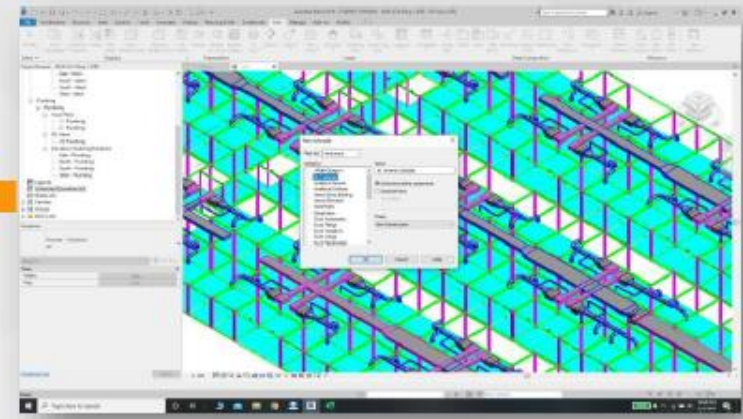
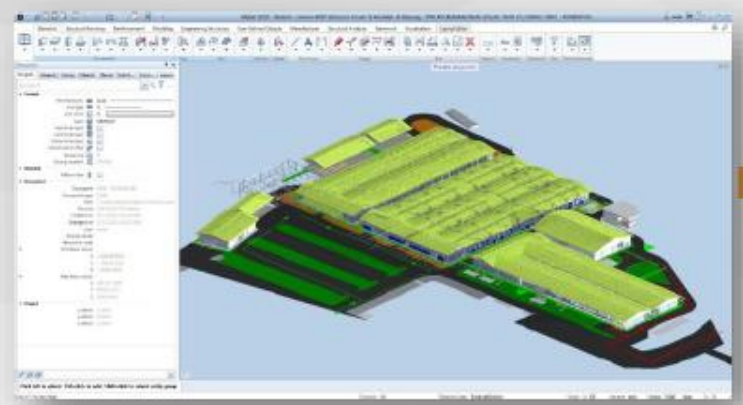
COMPLETE ALL BUILDING ELEMENT MODELING

TOTAL
6Days

ALLPLAN ENGINEERING

AUTODESK REVIT

OPENROAD DESIGNER



STRUCTURE-ARCHITECT MODELING

- ✔ Standardized modular element
- ✔ BBS & Quantity report
- ✔ Distributed Parallel Modeling

MEP MODELING

- ✔ VAC & Plumbing Modeling
- ✔ Detailed Quantity Take Off
- ✔ Combine for Composite Drawing

ROAD & LANDSCAPING

- ✔ Road Access, Pedestrian, Parking
- ✔ Cut & Fill Quantity Volume
- ✔ Export to Exchange Files (.ifc)

REVIEW

SURVEY

DESIGN

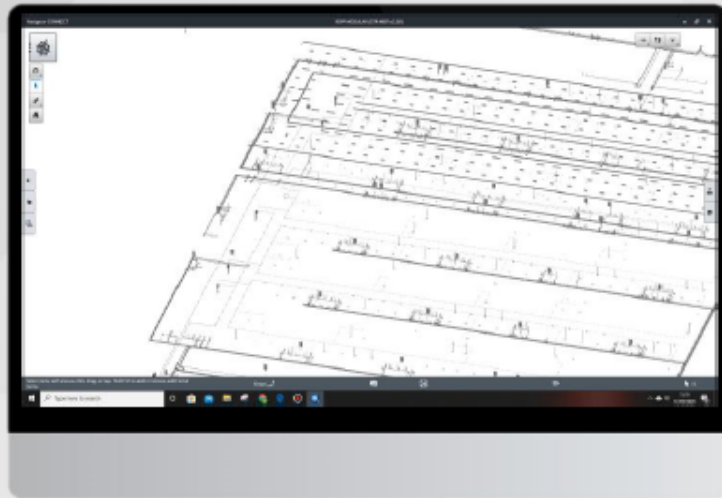
REVIEW

CONSTRUCT

VISUALIZATION

PUBLISH

REVIEW DESIGN, COMMENTING & MAKE DECISION

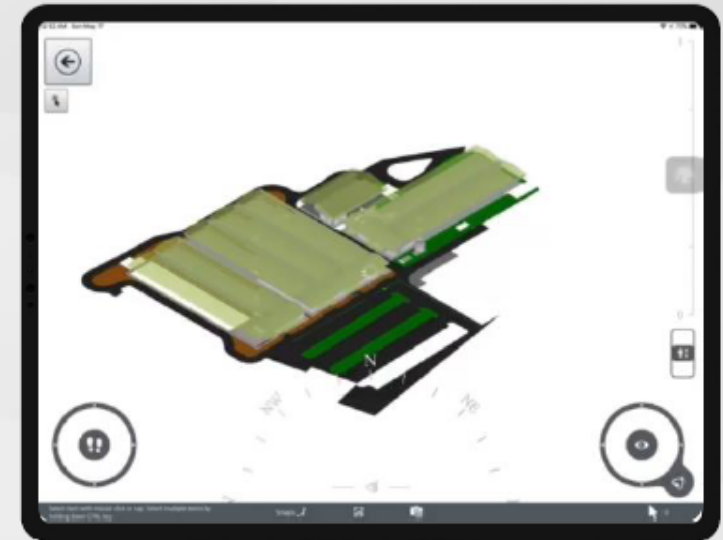


DESKTOP VERSION

- ✓ Check clash detection between Model
- ✓ Measure & Dimensioning relevant element
- ✓ Leave comment, Issued resolution to Engineer



BENTLEY
NAVIGATOR



MOBILE VERSION

- ✓ Review model directly on site through App
- ✓ Easy to navigate the model
- ✓ Synchronize even without internet connection

VISUALIZATION

SURVEY

DESIGN

REVIEW

CONSTRUCT

VISUALIZATION

PUBLISH

SUPERIMPOSE WITHIN CONTEXT & CREATE VISUALIZATION



SUPERIMPOSE

- ✓ Superimpose Model & Photogrammetry
- ✓ Navigate & Review Model in Context
- ✓ Create Animation & Hi-Res Photo



EXPORT LIVE CUBE



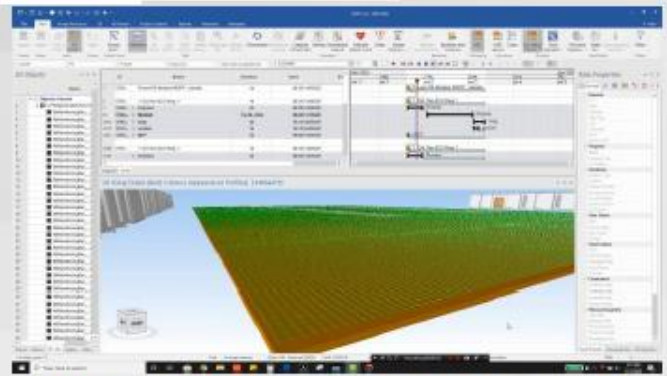
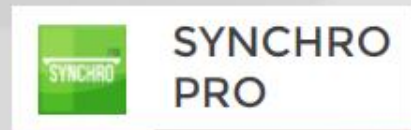
CINEMATIC VISUALIZATION

- ✓ Visualize 3D Model for great presentation
- ✓ Navigate & Explore the High Res Model
- ✓ Live Synchronize the model with Revit



CONSTRUCT MODULAR FASTER & CONFIDENT

TOTAL
3 Days



4D MODULAR SCHEDULING

- ✓ Faster modular scheduling
- ✓ Check dependencies each element
- ✓ Automatch the model to update

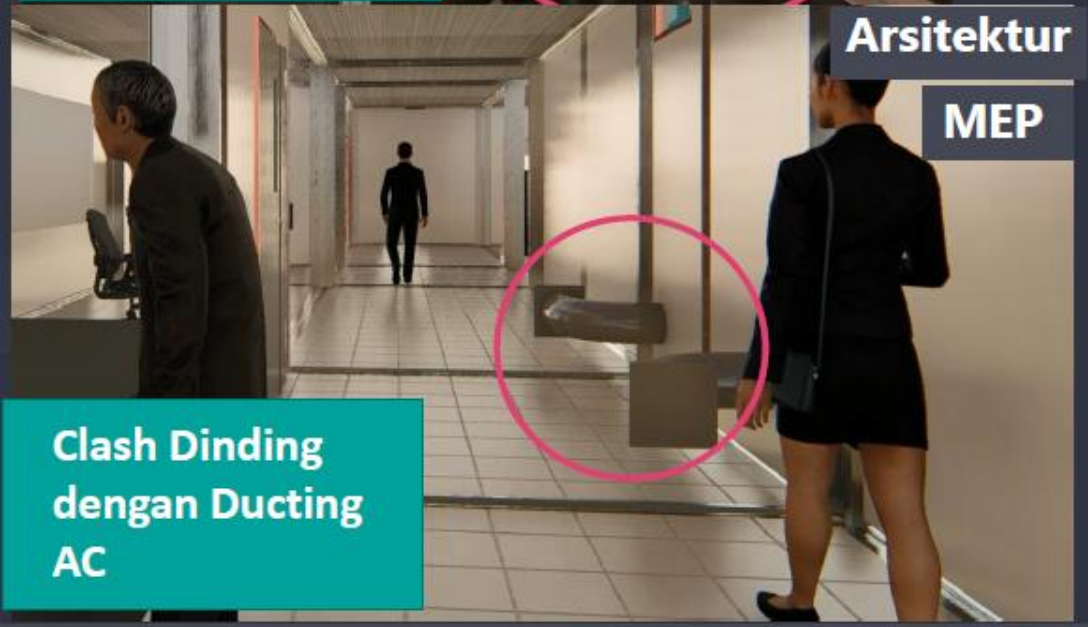
5D COST ESTIMATION

- ✓ Display running cost per day
- ✓ Indentify cost difference with actual
- ✓ Automatch unit price to update

AIR FLOW SIMULATION

- ✓ Calculate building heating & cooling load
- ✓ Design building MEP Services
- ✓ Simulate negative pressure airflow

Activate Windows
Go to Settings to activate Windows.



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QUANTITY REPORT

ALLPLAN REPORT

ALLPLAN

Unfinished walls

Project: Wall CU (Red Zone) / Tanpa Operasi - RSPF Extension Covid-19 Modular di Simpung

Created by: BM WIKI

Date / time: 03/2020 / 22:04

Note: Openings are analyzed in compliance with German building regulations

Material per story	Area (m²)	Volume (m³)
ISI LUAR WALL GEDUNG ISOLASI	5798.765	
ISI TENGAH WALL GEDUNG ISOLASI	2892.343	2892.043

REVIT REPORT

Reinforcement schedule - bending shape:

Project: STASIUN HSR HALIM KE LUMICIN

For layout: ASUS-DIKA

Edited by: ASUS-DIKA

Date / time: 3/2/2020 / 16:07

Note:

All bar shapes

Mark	Pcs	Ø [mm]	Dimensioned b	Volume (m³)
TULANGAN				
1	558	10	(1040)	0.018640
2	2359	10	(1240)	0.011693
3	18	10		0.012071

Wall Report

BBS Slab

VAC Report

BQ SUMMARY

STRUCTURE

Volume BIM

No	Item Pekerjaan	Volume BIM																		
		Main Building						Ann Building												
		KCU	SEK	NI WING 1	SEK	NI WING 2	SEK	KSD	SEK	NI JENAZAH	SEK	LAUNDRY	SEK	DAPUR	SEK	FARMASI	SEK	POWER	SEK	
1.1	PONDASI RAFT	10334.811	13268.421	11888.520	2691.589	976.717	2566.892	508.944	5667.351	10334.811	13268.421	11888.520	2691.589	976.717	2566.892	508.944	5667.351	10334.811	13268.421	11888.520

ARCHITECT

Volume BIM

No	Item Pekerjaan	Volume BIM																		
		Main Building						Ann Building												
		KCU	SEK	NI WING 1	SEK	NI WING 2	SEK	KSD	SEK	NI JENAZAH	SEK	LAUNDRY	SEK	DAPUR	SEK	FARMASI	SEK	POWER	SEK	
1.1	MODULAIR																			

MEP

Volume BIM

No	Item Pekerjaan	Volume BIM																		
		Main Building						Ann Building												
		KCU	SEK	NI WING 1	SEK	NI WING 2	SEK	KSD	SEK	NI JENAZAH	SEK	LAUNDRY	SEK	DAPUR	SEK	FARMASI	SEK	POWER	SEK	
1.4	DUCTING																			

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BIM OUTCOME

VISUALIZATION



STATISTICS

VAC DUCTING	2.08 KM	LENGTH
PLUMBING PIPE	7.48 KM	
FITTING PIPE	3984 PARTS	

QUANTITY

ROOF STEEL	58134 KG
MODULAR	504

4D SCHEDULE

Start	End	Activity
1d	08:00 14:05:20	1. Gd. Non-ICU Wind 1
3d	08:00 14:05:20	Pondasi
7d, 8h, 35m	08:00 17:05:20	MEP
2d	16:35 24:05:20	1. Gd. Non-ICU Wind 1
1d	16:35 24:05:20	Pondasi
1d	08:00 14:05:20	1. Gd. Non-ICU Wind 1
3d	08:00 14:05:20	Pondasi

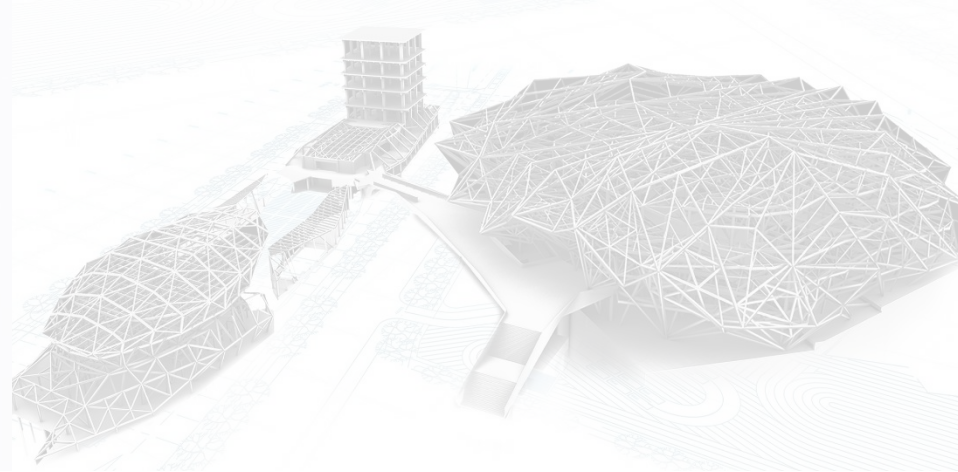
CLASH DETECTION



54 CLASH
STR-ARS-MEP



5D COST



BIM Level 2 by Adhi Karya



Infrastruktur Penggunaan BIM 360 Di LS 2



No	Nama	Jabatan	Koneksi	Perangkat Yang Digunakan
1	Ujang Ramdan	Project Manager	Tethering Handphone	Laptop
Tim Engineering				
2	Aang Hermawan	Project Commercial Manager	Tethering Handphone	Laptop
3	Tatok Damar Raharjo	Project Engineering Manager	Tethering Handphone	Laptop
4	Kusrini Retno	Project QHSE Manager	Home Internet (Mes)	Laptop
5	Nicho Liang	Scheduler	Home Internet (Mes)	Laptop
6	Fredrik Hutapea	Conctrusion Engineer	Tethering Handphone	Laptop
7	Annisa Ariyanti P	Cost Control	Home Internet (Mes)	Laptop
8	Satriawan	Quantity Surveyor	Tethering Handphone	Komputer
9	Ahmad Nur Amin	Quantity Surveyor	Tethering Handphone	Laptop
10	Bambang Murdianto	Modeler	Tethering Handphone	Komputer
11	Anggi Fadillah	Modeler	Tethering Handphone	Komputer
12	Arnando	Modeler	Tethering Handphone	Komputer
13	Bambang Wahyu	Administrasi, Reporting, DMS	Internet Kantor	Laptop
14	Mira Andrea	Administrasi, Reporting, DMS	Tethering Handphone	Laptop
15	Rudiyat	Administrasi, Reporting, DMS	Internet Kantor	Laptop
16	Agung Adi Laksono	DMSProyek	Internet Kantor	Komputer
17	Suparjianto	Project Procurement	Internet Kantor	Laptop
18	Rudi Sugianto	Inventory	Internet Kantor	Laptop
19	Mario Adianto	Quality Control	Internet Lapangan	Laptop
20	Daud Wijaya	Quality Control	Internet Lapangan	Laptop

No	Nama	Jabatan	Koneksi	Perangkat Yang Digunakan
Tim Lapangan				
21	Arfian Triastanto	Project Production Manager	Internet Lapangan	Tablet
22	Kasmirin Didit	Project Production Manager	Internet Lapangan	Tablet
23	Jafari	Supervisor	Tethering Handphone	Handphone
24	Darsiyat	Supervisor	Tethering Handphone	Handphone
25	Binuri	Supervisor	Tethering Handphone	Handphone
26	Purwanto	Supervisor	Internet Lapangan	Tablet
27	Suhardi	Ass. Supervisor	Internet Lapangan	Tablet
28	Hendro Purwoko	Surveyor	Tethering Handphone	Handphone
29	Supriyanto	Surveyor	Tethering Handphone	Handphone
30	Machmuddin	Surveyor	Internet Lapangan	Tablet
31	Nuke Nugroho	Ass. Surveyor	Internet Lapangan	Handphone
32	Faisal Yanuar	Ass. Surveyor	Internet Lapangan	Handphone
33	Tri Sulistyio	Ass. Surveyor	Tethering Handphone	Handphone

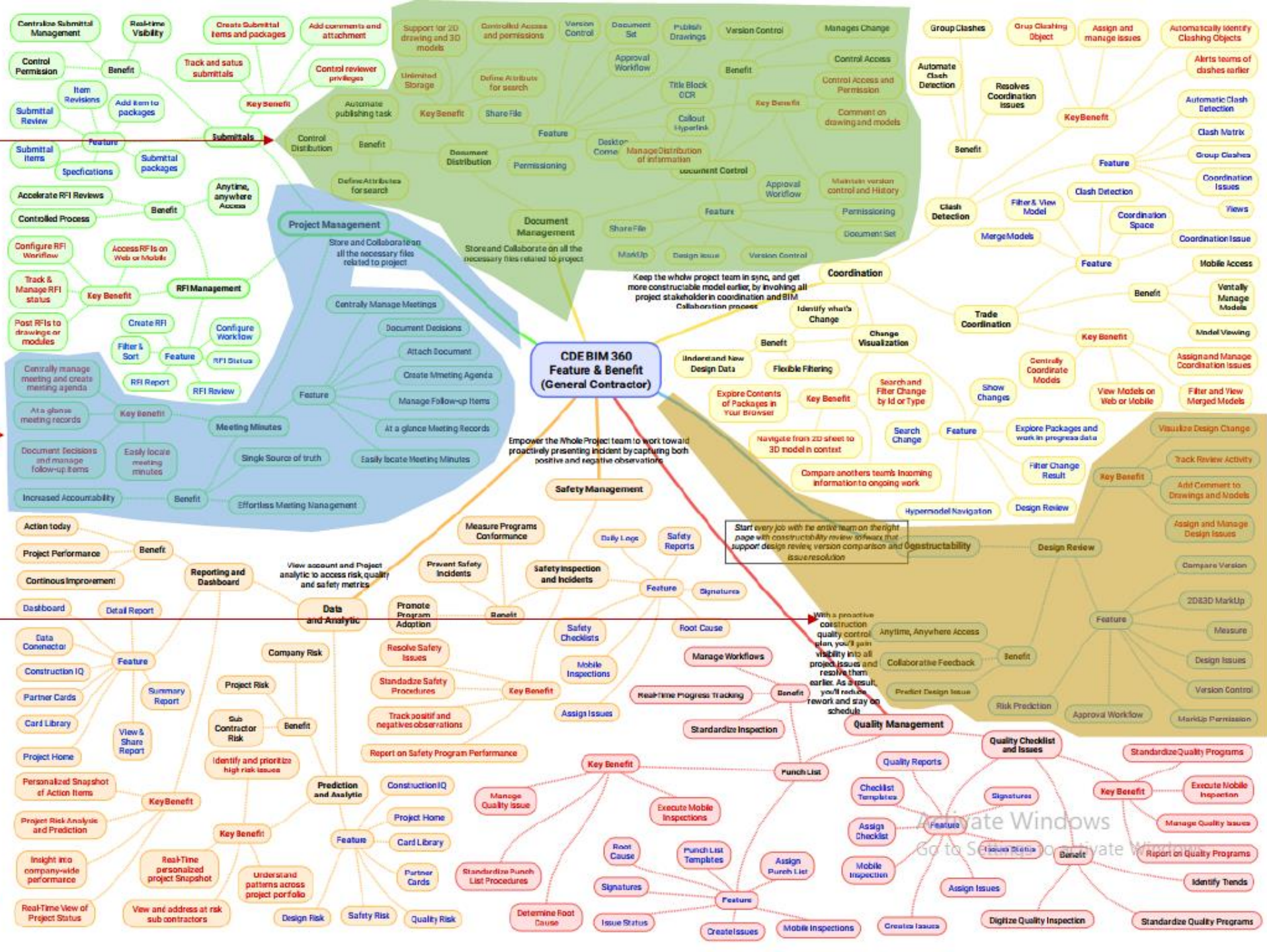
Tim Keuangan				
34	Indra Hadi	Project Finance Manager	Tethering Handphone	Laptop
35	Ayu Retno Dewatie	Staff Keuangan Proyek	Tethering Handphone	Laptop
36	Tatang Sumantri	General Afair	Tethering Handphone	Handphone



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CDE BIM 360 FEATURE

FITUR YANG DIGUNAKAN DI LONGSPAN 2



FITUR AUTODESK BIM 360



AUTODESK BIM 360 | BIM ADHI > 2015400203.3 - LRT Jabodebek Long Span Lintas Layanan 2 -



Project Admin

MEMBERS

COMPANIES

SERVICES

PROFILE

Overview

Issues

Document Management

Project Management

Project Services and Admins

Project Services & Admins is where you can activate and manage project service modules, add and remove service admins, and manage the settings of active services.

Active	Document Management	Show Admins
Active	Project Management	Show Admins

Autodesk BIM360 merupakan salah satu fitur dari sistem BIM yang berfungsi dalam hal koordinasi. Pada Autodesk BIM 360 terdapat beberapa services, yaitu

1. Document Management : Terdapat fitur share document (folders), proses review, transmittal, dan issues
2. Project Management : Terdapat fitur RFI, submittals, dan meetings
3. Field Management : terdapat checklist dan daily logs

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Feedback

1. Document Management

REVIEWS – PROSES APPROVAL



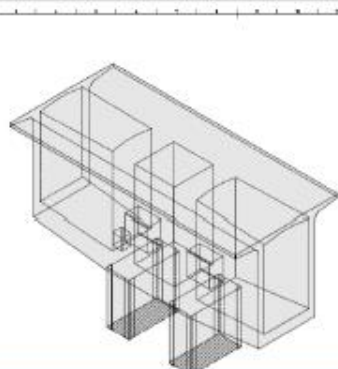
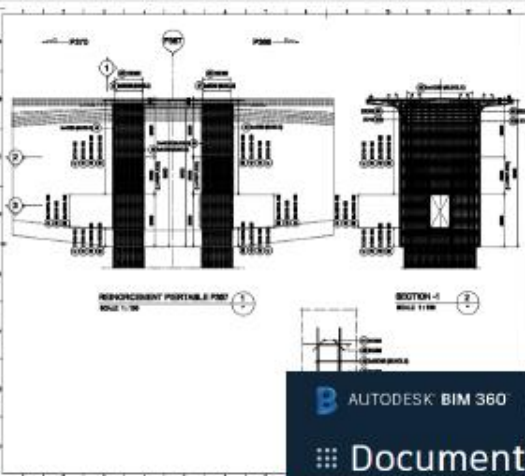
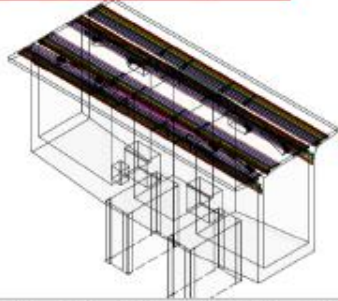
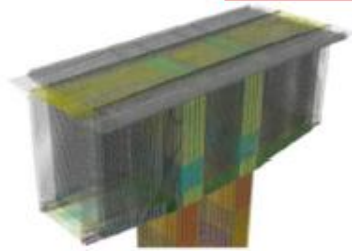
Activate Windows
Go to Settings to activate Windows.

Proses Implementasi BIM 360

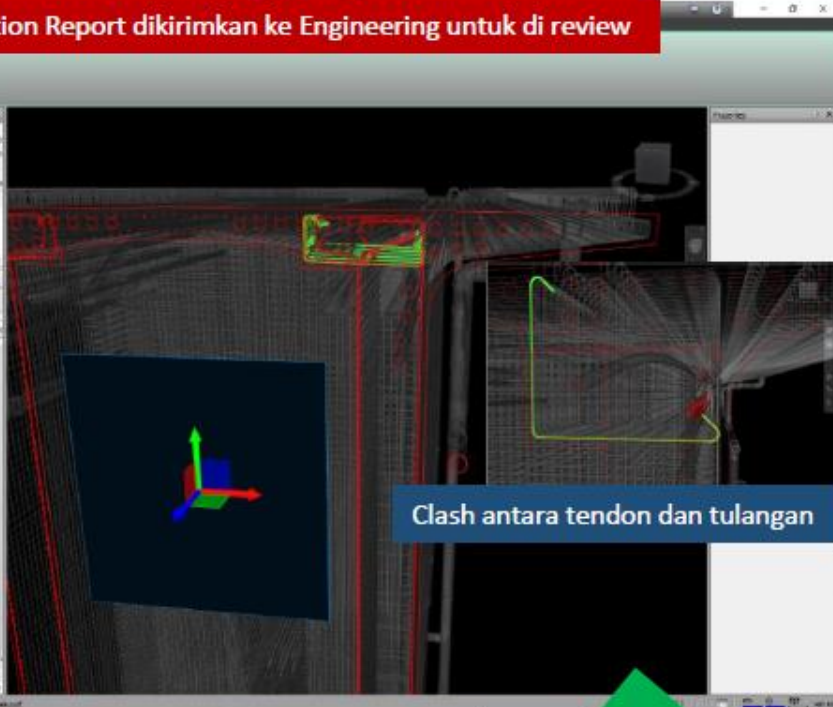
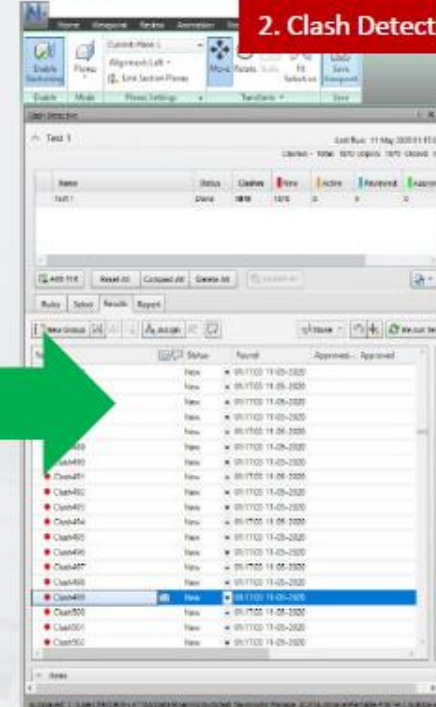
Sampai Lapangan Di Longspan 2



1. Produksi shop drawing menggunakan Allplan



2. Clash Detection Report dikirimkan ke Engineering untuk di review



Clash antara tendon dan tulangan

3. Setelah Clash Detection sudah di closed, penggambaran shop drawing final dan approval oleh Engineering dilanjutkan approval oleh Project Manager

Document Management

3. Setelah Clash Detection sudah di closed, penggambaran shop drawing final dan approval oleh Engineering dilanjutkan approval oleh Project Manager

Status	ID	Review name	Workflow	Initiated by	Next action by	Next action due	Documents	Approved	Rejected
OPEN	52	Shopdrawing Koordinate Sh...	Shopdrawing Approval	anggi fadillah	Scheduller, Fredrik ...	Tomorrow	3	--	--
OPEN	51	Shopdrawing Approval	Shopdrawing Approval	anggi fadillah	Project Manager	Tomorrow	3	--	--
OPEN	50	3d Naviswork Tendon Pierta...	Shopdrawing Approval	Bambang Murdianto	Scheduller, Fredrik ...	Today	5	--	--
CLOSED	49	Shopdrawing Koordinate Sh...	Shopdrawing Approval	anggi fadillah	--	--	13	13	0
OPEN	48	Shopdraw							

4. Setelah di approve oleh Project Manager, gambar di print DCC dan akan dikirim ke OCG

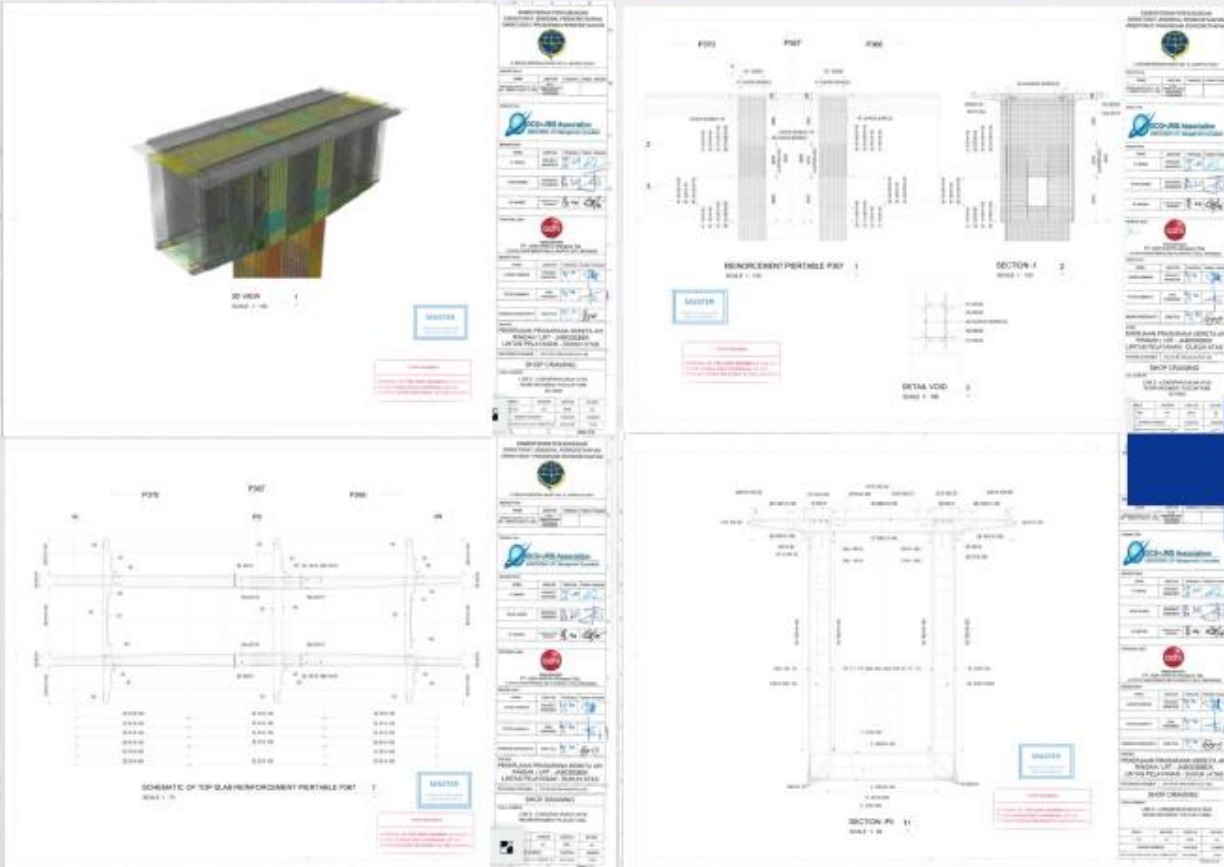
Activate Windows
Go to Settings to activate Windows.

Proses Implementasi BIM 360

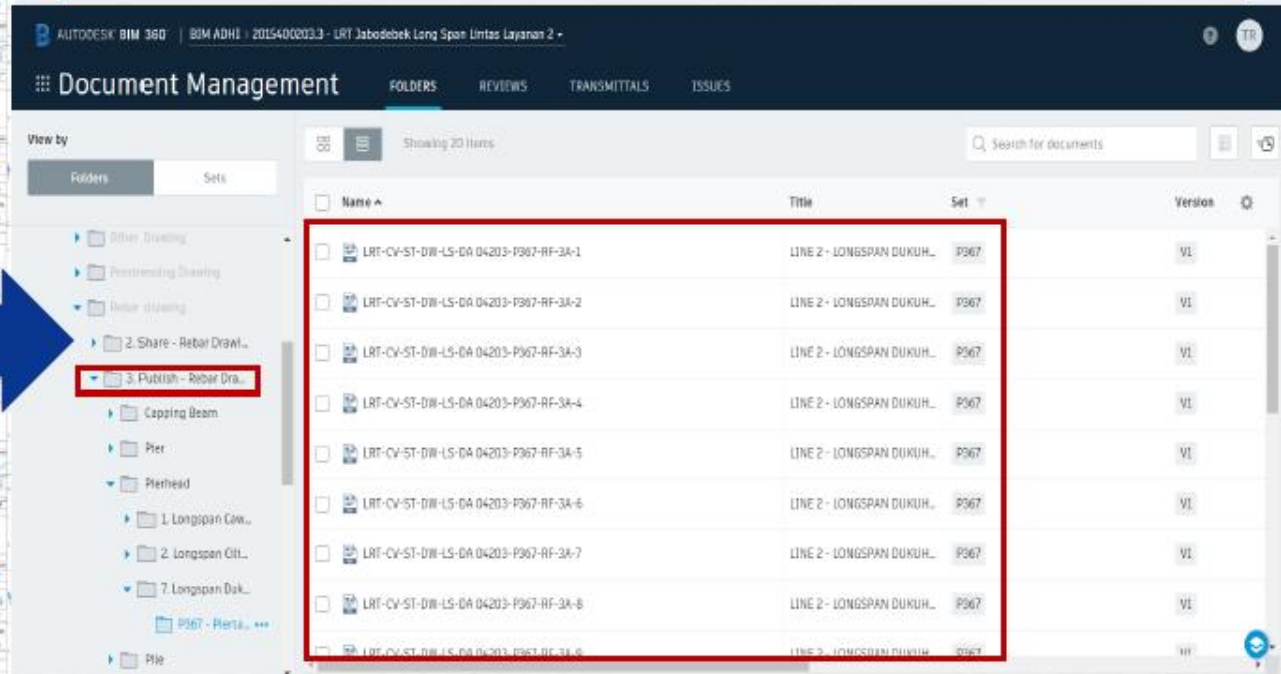
Sampai Lapangan Di Longspan 2



5. Gambar approved dari OCG di upload oleh DCC BIM ke folder "publish"



6. Gambar yang dimasukkan ke folder publish adalah gambar yang terupdate dan sudah approved



Activate Windows
Go to Settings to activate Windows.

Proses Implementasi BIM 360

Sampai Lapangan Di Longspan 2



7. Setelah gambar di published, tim lapangan dapat melihat gambar yang sudah di approve



Penggunaan DMS pada BIM 360 untuk mempresentasikan gambar kerja ke Direksi



Penggunaan BIM 360 di lapangan sebagai acuan kerja



Mandor juga ikut dalam penggunaan BIM 360 di lapangan

Proses Implementasi BIM 360

Sampai Lapangan Di Longspan 2



8. Sebelum pekerjaan pengecoran dilakukan, approval RFI dari OCG di upload DCC BIM ke folder "Published-RFI"

Document Management interface showing a list of documents. The folder 'Request for Inspection' is selected. The document '1828-AK-LRT-RF-LP2.3-V-2020_Beton Pierable P367 ok.pdf' is highlighted with a red box. A blue arrow points from this document to the RFI form on the right.

Name	Description	Version	Size	Last updated	Updated by
1786-AK-LRT-RF-LP2.3-III-2020_Shoring Pierable P367.pdf		V1	151.4 KB	Mar 11, 2020 2:11 PM	Ujang Ramdan
1826-AK-LRT-RF-LP2.3-V-2020_Rebar Pierable P367 ok.pdf		V1	471.6 KB	May 9, 2020 1:45 PM	Bambang Wahyu
1827-AK-LRT-RF-LP2.3-V-2020_Bekisting Pierable P367 ok.pdf		V1	471.3 KB	May 9, 2020 1:45 PM	Bambang Wahyu
1828-AK-LRT-RF-LP2.3-V-2020_Beton Pierable P367 ok.pdf		V1	471.4 KB	May 9, 2020 1:45 PM	Bambang Wahyu

Request for Inspection (RFI) form for a concrete pierable structure. The form includes fields for NO, CONTRACT NO. & DATE, WORK ITEM, DESCRIPTION, LOCATION, DATE & TIME FOR INSPECTION / MEASUREMENT, REQUEST BY CONTRACTOR, INSPECTION BY, and APPROVED BY. The form is signed by Ujang Ramdan, Project Manager.

FORM - 01

KEMENTERIAN PERHUBUNGAN REPUBLIK INDONESIA
PT. ADHI KARYA (Persero) Tbk
DEPARTEMEN PERKERETAAPIAN

OCG+JRIS Association
INDONESIA LRT Management Consultant

PROYEK PERCEPATAN PENYELENGGARAAN KERETA API RINGAN/LIGHT RAIL TRANSIT TERINTEGRASI DI WILAYAH JAKARTA, BOGOR, DEPOK DAN BEKASI

REQUEST FOR INSPECTION (RFI)
(PERMOHONAN UNTUK PEMERIKSAAN)

NO	1828/AK-LRT/RP/LP2.3/V/2020	DATE (Tanggal)	05 Mei 2020
CONTRACT NO. & DATE		CONTRACTOR	PT. ADHI KARYA (PERSERO) Tbk.
WORK ITEM (Jenis Pekerjaan)	Box Girder Cast In situ Structure	PAY ITEM NO. (Urutan)	LR.3
DESCRIPTION (Uraian)	Beton Readymix K' 40 Mpa	QUANTITY (jumlah)	203,58 m3
LOCATION (Lokasi)	P367 - long span RFI.		
DATE & TIME FOR INSPECTION / MEASUREMENT	04 Mei 2020		
REQUEST BY CONTRACTOR (Disiapkan oleh Kontraktor)	INSPECTION BY (Diperiksa oleh)	APPROVED BY (Disetujui oleh)	
	INSPECTOR/ENGINEER	PPK	ENGINEER
	PPK		PPK
	Ujang Ramdan Project Manager		

DESCRIPTION / COMMENT (Uraian / Komentar)

Activate Windows
Go to Settings to activate Windows.

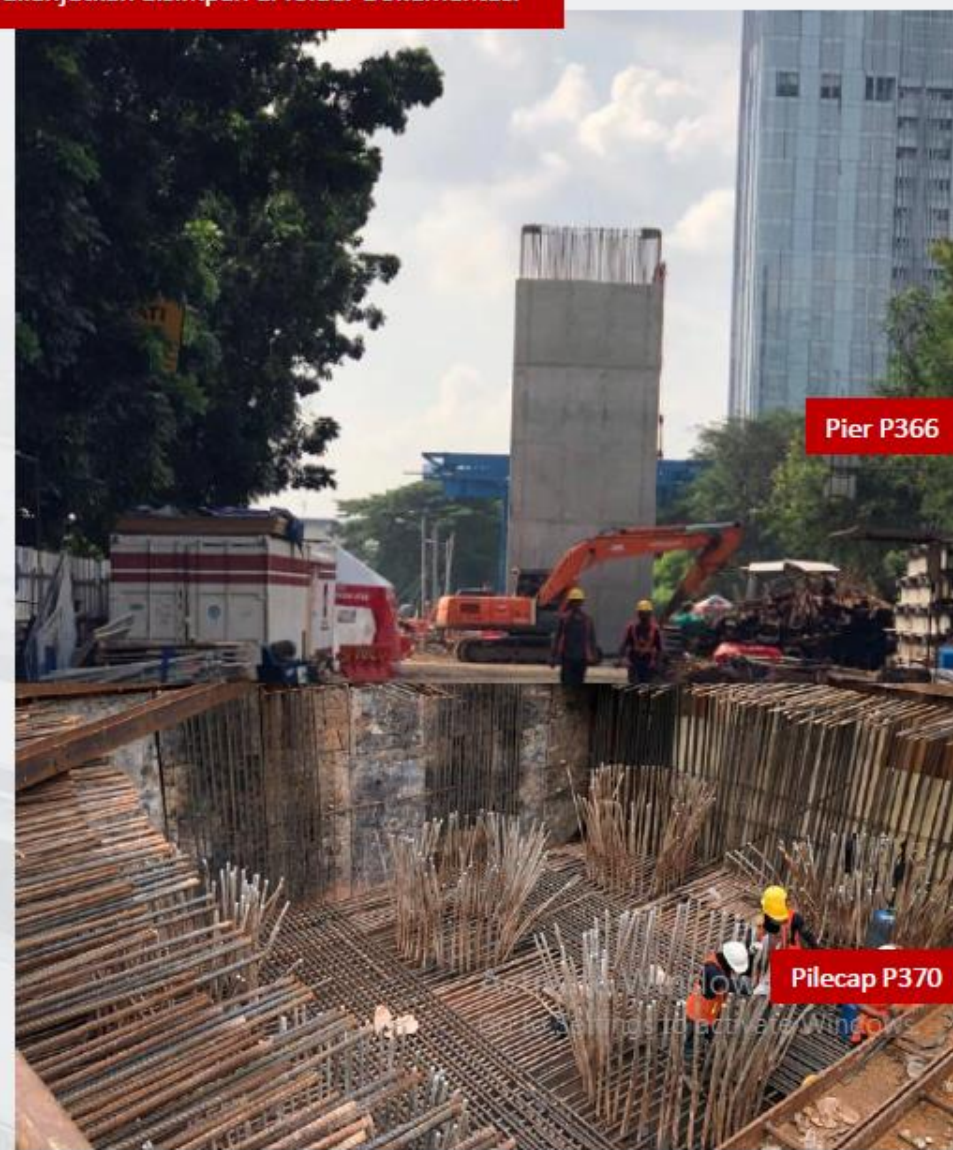
RFI disiapkan untuk inspeksi di lapangan

Proses Implementasi BIM 360

Sampai Lapangan Di Longspan 2



9. Hasil pekerjaan lapangan dengan menggunakan BIM 360 sebagai platform DMS dan dilanjutkan disimpan di folder Dokumentasi



KESIMPULAN

- Persiapkan Diri untuk Unggul menghadapi Society 5.0
- Menjadi UNGGUL dg menjadi SPESIALIS (sesuai *PASSION*: Jalan, Jembatan, Bangunan Gedung, Bendungan, dll)
- UNGGUL dengan BIM
- *Stay UPDATE* dan KUASAI IT, *trend* kedepan berbasis *Internet of Things* (IoT) seperti Robotics dan Otomasi (Konstruksi Digital)

PERAN IMTSSI/HMS (?)

Pelatihan

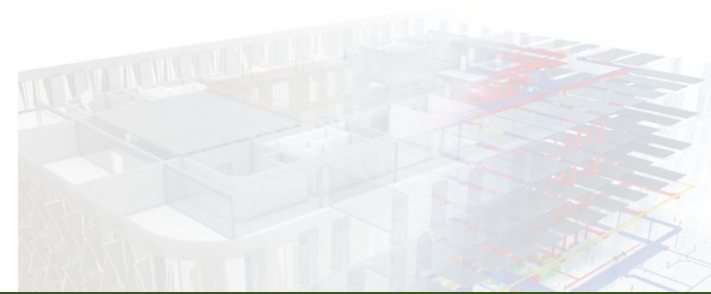
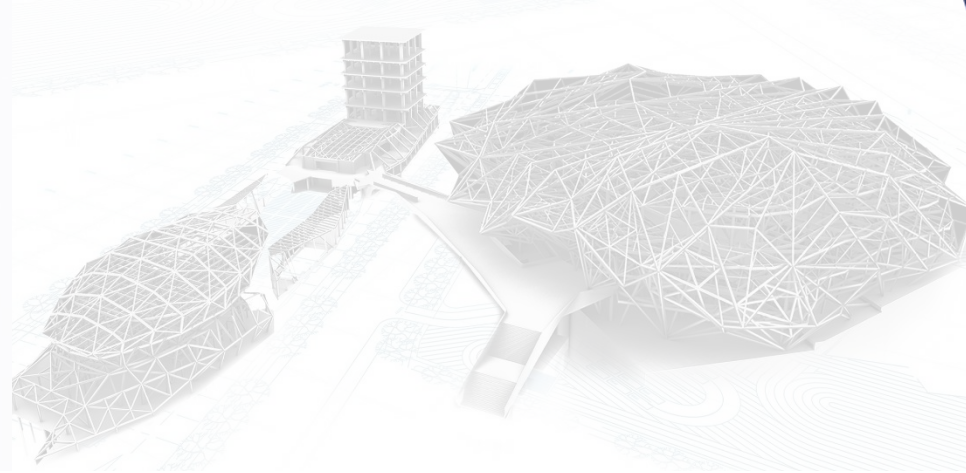
Sertifikasi Keahlian (SKA)

BIM/software Study Club

Kebutuhan IKN dan Daerah

Pengabdian Masyarakat

KOLABORASI
dengan
STAKEHOLDERS
(Penta-Helix:
Pemerintah-
Akademisi-Swasta-
Masyarakat-Media)



TERIMA KASIH